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EXAMINER	
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/566,043	MATSUI ET AL.	
	Examiner	Art Unit	
	STEPHEN A. BRAY	2629	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *18 December 2009*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-19* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-19* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date *11/09/2009*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

In an amendment dated, 12/18/2010, the Applicant argued the rejection of Claims 1-19. Currently claims 1-19 are pending.

Response to Arguments

1. Applicant's arguments, see Pages 16-21, filed 12/18/2009, with respect to the rejection(s) of claim(s) 1-2, 5-7, and 18-19 under 35 USC 102(b) have been fully considered and are persuasive. Therefore, the rejection has been withdrawn. However, upon further consideration, a new ground(s) of rejection is made in view of Hagiwara et al (US 2001/0048422) in view of Tsuk et al (US 2003/0076301). The Examiner agrees that *Hagiwara et al* fails to teach having a calculating unit, a judging unit, and a processing unit. However *Tsuk et al* does teach determining an amount of rotational movement and based on the detected amount of rotational movement, either scrolling normally through a list, or scrolling through the list using a "page down" or "page up" type of command.

Claim Rejections - 35 USC § 103

1. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was

not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

2. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

3. Claims 1-2, 5-7, and 18-19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hagiwara et al (US 2001/0048422) in view of Tsuk et al (US 2003/0076301).

Regarding claim 1, *Hagiwara et al* discloses a user interface system comprising:

a directional input unit having an operating member, and operable to receive at a point in time an input specifying one of at least three different directions, in response to a user operation of touching the operating member (Figure 3 of *Hagiwara et al* discloses a directional operating unit 3 with a support shaft 3c which acts as the operating member and is able to receive an input specifying one of three different directions.);

Hagiwara et al fails to teach a calculating unit operable to calculate an amount of change from a first direction to a second direction, when the directional input unit receives an input specifying the first direction followed within a predetermined time period by an input specifying the second direction;

a judging unit operable to judge whether the calculated amount of change falls within a predetermined range; and

a processing unit operable to perform a first process associated with each of the first and second directions when the judging unit judges negatively, and perform a

second process associated with the amount of change when the judging unit judges affirmatively.

Tsuk et al discloses a calculating unit operable to calculate an amount of change from a first direction to a second direction, when the directional input unit receives an input specifying the first direction followed within a predetermined time period by an input specifying the second direction (Paragraph [0040] of *Tsuk et al* discloses determining a number of units which corresponds to the amount of rotational input made by the user. Paragraphs [0076] - [0080] disclose that a processor 858 processes the input signals from rotational input device 854 and carries out the flow diagram shown in Figure 1.);

a judging unit operable to judge whether the calculated amount of change falls within a predetermined range (Paragraph [0041] of *Tsuk et al* discloses determining if the number of units, i.e. amount of rotational movement, falls within a given boundary, i.e. determining an acceleration factor, as shown in Figures 3-5.); and

a processing unit operable to perform a first process associated with each of the first and second directions when the judging unit judges negatively, and perform a second process associated with the amount of change when the judging unit judges affirmatively (Paragraph [0042] of *Tsuk et al* discloses that based on the determined acceleration factor, adjusting the scrolling speed of data being displayed on a display. Paragraph [0043] discloses that if the acceleration factor is greater than 0, i.e. the amount of rotational movement is very large, the list is scrolled through in a manner very similar to the page down function in a word processing document. If the amount of

rotational movement is small, i.e. less than a threshold, then the list is scrolled through item by item.).

Therefor it would have been obvious to one of ordinary skill in the art at the time that the invention was made to modify the input device taught by *Hagiwara et al* with the teachings of *Tsuk et al* in order to form an input device in which the scrolling speed of the input device can be increased based upon how the user manipulates the input device.

Regarding claim 2, *Hagiwara et al* as modified above discloses the user interface system according to Claim I, wherein

when the input specifying the first direction is followed within the predetermined time period by two or more inputs specifying directions different from the first direction, the calculating unit calculates the amount of change from the first to second directions which are specified respectively by the inputs received first and last within the predetermined time period (Paragraphs [0040] - [0041] of *Tsuk et al* disclose that the number of units shown in step 102 as shown in Figure 1 is dependent upon the amount of rotational movement made by the user on a rotational input device. Therefore the amount of rotational movement would be determined based on the distance from a first location where a first input was made at the beginning of a time period to a second location where a last input made at the end of said time period.).

Regarding claim 5, *Hagiwara et al* as modified above discloses the user interface system according to claim 1, further comprising:

a determining unit operable to determine, when the judging unit judges affirmatively and a process most recently performed is a first process, a second process as a candidate process to be performed (Figure 5 of *Tsuk et al* discloses that if the judging unit determined that the amount of rotational movement was greater than a calculated amount of change and the accelerated scroll process is performed, there is an option to go back to the normal scroll process.); and

a counting unit operable to keep count of how many times the determination is made (Figure 5 of *Tsuk et al* discloses that once a certain point is reached, the accelerated scroll process is maintained at the same speed.), wherein

when the determination count reaches a predetermined number, the processing unit performs second processes associated with the respective amounts of angular change having been calculated for making the determination (Figure 5 of *Tsuk et al* discloses that if the amount of rotational movement ever falls below the threshold amount, the scroll process goes back to the normal speed.).

Regarding claim 6, *Hagiwara et al* as modified above discloses the user interface system according to claim 1, further comprising:

a determining unit operable to determine, when the judging unit judges negatively and when a process most recently performed is a second process, a first process as a candidate process to be performed (Figure 5 of *Tsuk et al* discloses that if the judging unit determined that the amount of rotational movement is less than a calculated amount of change and the normal scroll process is performed, there is an option to go an perform the accelerated scroll process.); and

a counting unit operable to keep count of how many times the determination is made (Figure 5 of *Tsuk et al* discloses that until the amount of rotational movement is greater than the threshold amount, the scroll process is performed at the normal speed.), wherein

when the determination count reaches a predetermined number, the processing unit performs first processes associated with the respective directions having been received for making the determination (Figure 5 of *Tsuk et al* discloses that if the amount of rotational movement rises above the threshold amount, the scroll process goes from the normal speed to the accelerated scroll process speed.).

Regarding claim 7, *Hagiwara et al* as modified above discloses the user interface system according to claim 1, wherein

when the input specifying the first direction is followed within the predetermined time period by no input specifying another direction, the processing unit performs a first process associated with the first direction (Paragraph [0044] and Figure 4a of *Hagiwara et al* disclose that when operation body 3a is inclined to select the character "G" and operation body 3a is pushed down, character "G is selected. The Examiner defines a predetermined period of time to be any period of time, from 5 seconds to 5 minutes to whenever operation body 3a is pushed downward to select a character.).

Regarding claim 18, *Hagiwara et al* as modified above discloses a program for use by a computer having an operating member and a directional input unit that is operable to receive at a point in time an input specifying one of at least three directions (Figure 3 of *Hagiwara et al* discloses a directional operating unit 3 with a support shaft

3c which acts as the operating member and is able to receive an input specifying one of three different directions.), the program comprising code operable to cause the computer to perform:

a calculating step of calculating an amount of change from a first direction to a second direction, when the directional input unit receives an input specifying the first direction followed within a predetermined time period by an input specifying the second direction (Paragraph [0040] of *Tsuk et al* discloses determining a number of units which corresponds to the amount of rotational input made by the user. Paragraphs [0076] - [0080] disclose that a processor 858 processes the input signals from rotational input device 854 and carries out the flow diagram shown in Figure 1.);

a judging step of judging whether the calculated amount of change falls within a predetermined range (Paragraph [0041] of *Tsuk et al* discloses determining if the number of units falls within a given boundary, i.e. determining an acceleration factor, as shown in Figures 3-5.); and

a step of performing a first process associated with each of the first and second directions when the judging unit judges negatively, and performing a second process associated with the amount of change when the judging unit judges affirmatively (Paragraph [0042] of *Tsuk et al* discloses that based on the determined acceleration factor, adjusting the scrolling speed of data being displayed on a display. Paragraph [0043] discloses that if the acceleration factor is greater than 0, i.e. the amount of rotational movement is very large, the list is scrolled through in a manner very similar to the page down function in a word processing document. If the amount of rotational

movement is small, i.e. less than a threshold, then the list is scrolled through item by item.).

Regarding claim 19, *Hagiwara et al* as modified above discloses a computer-readable medium storing a program for use by a computer having an operating member and a directional input unit that is operable to receive at a point in time an input specifying one of at least three directions (Figure 3 of *Hagiwara et al* discloses a directional operating unit 3 with a support shaft 3c which acts as the operating member and is able to receive an input specifying one of three different directions.), the program comprising code operable to cause the computer to perform:

a calculating step of calculating an amount of change from a first direction to a second direction, when the directional input unit receives an input specifying the first direction followed within a predetermined time period by an input specifying the second direction (Paragraph [0040] of *Tsuk et al* discloses determining a number of units which corresponds to the amount of rotational input made by the user. Paragraphs [0076] - [0080] disclose that a processor 858 processes the input signals from rotational input device 854 and carries out the flow diagram shown in Figure 1.);

a judging step of judging whether the calculated amount of change falls within a predetermined range (Paragraph [0041] of *Tsuk et al* discloses determining if the number of units falls within a given boundary, i.e. determining an acceleration factor, as shown in Figures 3-5.); and

a step of performing a first process associated with each of the first and second directions when the judging unit judges negatively, and performing a second process

associated with the amount of change when the judging unit judges affirmatively (Paragraph [0042] of *Tsuk et al* discloses that based on the determined acceleration factor, adjusting the scrolling speed of data being displayed on a display. Paragraph [0043] discloses that if the acceleration factor is greater than 0, i.e. the amount of rotational movement is very large, the list is scrolled through in a manner very similar to the page down function in a word processing document. If the amount of rotational movement is small, i.e. less than a threshold, then the list is scrolled through item by item.).

4. Claims 3-4 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hagiwara et al (US 2001/0048422) and Tsuk et al (US 2003/0076301) as applied to claim 1 above, and further in view of Trent, Jr. et al (US 7,466,307).

Regarding claim 3, *Hagiwara et al* as modified above discloses the user interface system according to claim 1.

Hagiwara et al as modified above fails to teach wherein one of the directions available for an input to the operating member is a reference direction and each of the directions is expressed by an angle formed with the reference direction, and

the calculating unit calculates an amount of angular change from a first angle expressing the first direction to a second angle expressing the second direction, when the directional input unit receives the input specifying the first direction followed within the predetermined time period by the input specifying the second direction.

Trent, Jr. et al discloses wherein one of the directions available for an input to the operating member is a reference direction and each of the directions is expressed by an angle formed with the reference direction (Figure 44 and Column 19, lines 10-40 of *Trent, Jr. et al* disclose that each position is calculated with respect to a reference direction.), and

the calculating unit calculates an amount of angular change from a first angle expressing the first direction to a second angle expressing the second direction, when the directional input unit receives the input specifying the first direction followed within the predetermined time period by the input specifying the second direction (Figure 44 and Column 19, lines 10-40 of *Trent, Jr. et al* discloses determining the amount of angular change from the first direction to the second direction by subtracting the first position from the second position.).

Therefore it would have been obvious to one of ordinary skill in the art at the time that the invention was made to further modify the input apparatus taught by *Hagiwara et al* with the teachings of *Trent, Jr. et al* in order to form an input apparatus in which angular motion on the input apparatus can be determined with greater ease.

Regarding claim 4, *Hagiwara et al* as modified above discloses the user interface system according to claim 3, wherein

each of the directions available for an input to the operating member is expressed by 360° with respect to the reference direction at 0°, and the predetermined range is 10°<|amount of angular change|<160° (Paragraph [0038] of *Hagiwara et al* discloses that each character disposed on operation unit 3 is disposed in an angular

region α defined by α = 360/26 = 13.8°. Figure 44 and Column 19, lines 10-40 of *Trent, Jr. et al* discloses determining the direction of angular input by assuming that the user cannot travel more than 180° within the predetermined time period. Therefore Hagiwara et al and *Trent, Jr. et al* in combination teach the predetermined range listed above.).

5. Claim 8 is rejected under 35 U.S.C. 103(a) as being unpatentable over Hagiwara et al (US 2001/0048422) and Tsuk et al (US 2003/0076301) as applied to claim 1 above, and further in view of Inoue et al (US 2003/0085793).

Regarding claim 8, *Hagiwara et al* as modified abovediscloses the user interface system according to claim 1.

Hagiwara et al as modified above fails to teach wherein the directional input unit includes:

a resistive layer formed on an insulating substrate;

a conducting member formed on a planar substrate facing the resistive layer across a predetermined insulating gap; and

the operating member used to bring the resistive layer partially into contact with the conducting member, wherein

in response to a user operation of touching the operating member under a condition where a predetermined voltage is applied to the resistive layer, the insulating substrate and the planar substrate are brought partially into contact, so that an input specifying a direction is received based on a voltage conducted as a result of the partial contact.

Inoue et al discloses wherein the directional input unit includes:

a resistive layer formed on an insulating substrate (Paragraph [0056] discloses that resistive layer 18 is printed on a flexible insulating substrate 16.);

a conducting member formed on a planar substrate facing the resistive layer across a predetermined insulating gap (Paragraph [0056] discloses that conducting layers 22 and 23 are disposed on printed circuit substrate 13 and separated from resistive layer 18 by insulating spacers 16B.); and

the operating member used to bring the resistive layer partially into contact with the conducting member (Figures 4-5 and Paragraph [0056] disclose that knob 14 is used to bring the resistive layer 18 into contact with conductive layers 22 and 23.), wherein

in response to a user operation of touching the operating member under a condition where a predetermined voltage is applied to the resistive layer, the insulating substrate and the planar substrate are brought partially into contact, so that an input specifying a direction is received based on a voltage conducted as a result of the partial contact (Paragraph [059] – [0060] discloses that a predetermined DC voltage is applied to the resistive layer 18. When resistive layer 18 is brought into contact with conductive layers 22 and 23, an output voltage VI is generated that specifies where on the input unit the touch has occurred.).

Therefore it would have been obvious to one of ordinary skill in the art at the time that the invention was made to further modify the input apparatus taught by *Hagiwara et*

al with the teachings of *Inoue et al* in order to form an input apparatus which can be made smaller without compromising the resolution of the input apparatus.

6. Claims 9, 11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hagiwara et al (US 2001/0048422) and Tsuk et al (US 2003/0076301) as applied to claim 1 above, and further in view of Nguyen (US 7,036,091).

Regarding claim 9, *Hagiwara et al* as modified above discloses the user interface system according to claim 1, further comprising:

a storage unit operable to store a first table and a second table, the first table associating the individual directions with the options, and the second table associating the individual amounts of change with movement directions and amounts of the selected position (Figure 8 of *Tsuk et al* discloses having a storage unit 804, which would store the operation code for performing the processing shown in Figures 1 and 3-5.), wherein

when the judging unit judges negatively, the processing unit refers to the first table to accordingly perform the first process, so that an option associated with each direction input to the directional input unit is focused or selected (Paragraph [0040] – [0043] and Figures 3-5 of *Tsuk et al* disclose performing the normal scroll process when the amount of rotational movement is less than a given amount.), and

when the judging unit judges affirmatively, the processing unit refers to the second table to accordingly perform the second process, so that the selected position is moved in a movement direction and amount associated with the calculated amount of

change (Paragraph [0043] of *Tsuk et al* discloses performing an accelerated scroll function when the amount of rotational movement is determined to be greater than a predetermined amount.).

Hagiwara et al as modified above fails to teach a display unit operable to display (i) a group of options in an annular array, and (ii) a selected position movable to any of the options to indicate that the option is currently focused or selected; and

Nguyen discloses a display unit operable to display (i) a group of options in an annular array, and (ii) a selected position movable to any of the options to indicate that the option is currently focused or selected (Figure 4 shows a display 104 with a group of options 424 and an indicator 428 which indicates which option is currently selected.); and

Therefore it would have been obvious to one of ordinary skill in the art at the time that the invention was made to further modify the input apparatus taught by *Hagiwara et al* with the teachings of *Nguyen* in order to form an input apparatus in which all the characters available for selection are displayed upon the display device.

Regarding claim 11, *Hagiwara et al* as modified above discloses the user interface system according to claim 1, further comprising:

a display unit operable to display an image of a dial on which a group of letters are arranged in an annular array selected (Figure 4 of *Nguyen* shows a display 104 with a group of options 424 and an indicator 428 which indicates which option is currently selected. Paragraph [0045] of *Hagiwara et al* discloses that a plurality of characters can be displayed before and after the selected character on display unit 11.); and

a storage unit operable to store a table associating the individual amounts of change with rotational directions and amounts of the dial (Figure 8 of *Tsuk et al* discloses having a storage unit 804, which would store the operation code for performing the processing shown in Figures 1 and 3-5.), wherein

when the judging unit judges negatively, the processing unit performs the first process, so that each input to the directional input unit is discarded and causes no text input (Paragraph [0040] – [0043] and Figures 3-5 of *Tsuk et al* disclose performing the normal scroll process when the amount of rotational movement is less than a given amount.), and

when the judging unit judges affirmatively, the processing unit refers to the table to accordingly perform the second process, so that the dial is rotated in a rotational direction and amount associated with the calculated amount of change and that text of a letter placed at a predetermined position as a result of the rotation is input (Paragraph [0043] of *Tsuk et al* discloses performing an accelerated scroll function when the amount of rotational movement is determined to be greater than a predetermined amount.).

7. Claim 10 is rejected under 35 U.S.C. 103(a) as being unpatentable over Hagiwara et al (US 2001/0048422) and Tsuk et al (US 2003/0076301) as applied to claim 1 above, and further in view of Duarte (US 2003/0043206).

Regarding claim 10, *Hagiwara et al* as modified above discloses the user interface system according to claim 1, further comprising:

a storage unit operable to store a first table and a second table, the first table associating the individual directions with the files, and the second table associating the individual amounts of change with movement directions and amounts of a selected one of the files (Figure 8 of *Tsuk et al* discloses having a storage unit 804, which would store the operation code for performing the processing shown in Figures 1 and 3-5.), wherein

when the judging unit judges negatively, the processing unit refers to the first table to accordingly perform the first process, so that a file associated with each direction input to the directional input unit is selected (Paragraph [0040] – [0043] and Figures 3-5 of *Tsuk et al* disclose performing the normal scroll process when the amount of rotational movement is less than a given amount.), and

when the judging unit judges affirmatively, the processing unit refers to the second table to accordingly perform the second process, so that a currently selected file is moved in a movement direction and amount associated with the calculated amount of change and placed into a folder if the selected file is moved to where the folder is located change (Paragraph [0043] of *Tsuk et al* discloses performing an accelerated scroll function when the amount of rotational movement is determined to be greater than a predetermined amount.).

Hagiwara et al as modified above fails to teach a display unit operable to display a plurality of files and folders in an annular array; and

Duarte discloses a display unit operable to display a plurality of files and folders in an annular array (Figure 1 discloses arranging a plurality of files and folders in an annular array.).

Therefore it would have been obvious to one of ordinary skill in the art at the time that the invention was made to further modify the input apparatus taught by *Hagiwara et al* with the teachings of *Duarte* in order to form an input apparatus in which it is easier to view all of the options available for selection.

8. Claims 12-13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hagiwara et al (US 2001/0048422) and Tsuk et al (US 2003/0076301) as applied to claim 1 above, and further in view of Robbin et al (US 2003/0095096).

Regarding claim 12, *Hagiwara et al* as modified above discloses the user interface system according to claim 1, further comprising:

a storage unit operable to store a first table and a second table, the first table associating the individual directions with processes to be performed, and the second table associating the individual amounts of change with levels of audio output of content targeted for playback (Figure 8 of *Tsuk et al* discloses having a storage unit 804, which would store the operation code for performing the processing shown in Figures 1 and 3-5.), wherein

when the judging unit judges negatively, the processing unit refers to the first table to accordingly perform the first process associated with each direction input to the directional input unit (Paragraph [0040] – [0043] and Figures 3-5 of *Tsuk et al* disclose performing the normal scroll process when the amount of rotational movement is less than a given amount.), and

when the judging unit judges affirmatively, the processing unit refers to the second table to accordingly perform the second process, so that the content is played with audio output at a level associated with the calculated amount of change (Paragraph [0043] of *Tsuk et al* discloses performing an accelerated scroll function when the amount of rotational movement is determined to be greater than a predetermined amount.).

Hagiwara et al as modified above fails to teach a playback unit operable to play content with audio; and

the second table associating the individual amounts of change with levels of audio output of content targeted for playback.

Robbin et al discloses a playback unit operable to play content with audio (Figure 1B discloses a media player 100.); and

the second table associating the individual amounts of change with levels of audio output of content targeted for playback (Paragraph [0051] discloses that rotational movement can be used to make a volume adjustment.).

Therefore it would have been obvious to one of ordinary skill in the art at the time that the invention was made to modify the input apparatus taught by *Hagiwara et al* with the teachings of *Robbin et al* in order to form an input apparatus which realizes a greater ease of use of computing devices.

Regarding claim 13, *Hagiwara et al* as modified above discloses the user interface system according to claim 1, further comprising:

a playback unit operable to play content (Figure 1B of *Robbin et al* discloses a media player 100.); and

a storage unit operable to store a first table and a second table, the first table associating the individual directions with processes to be performed, and the second table associating the individual amounts of change with speeds at which content targeted for playback is fast-forwarded or rewound (Figure 8 of *Tsuk et al* discloses having a storage unit 804, which would store the operation code for performing the processing shown in Figures 1 and 3-5. Paragraph [0037] of *Robbin et al* discloses that media player 100 contains buttons for fast-forwarding and re-winding.), wherein

when the judging unit judges negatively, the processing unit refers to the first table to accordingly perform the first process associated with each direction input to the directional input unit (Paragraph [0040] – [0043] and Figures 3-5 of *Tsuk et al* disclose performing the normal scroll process when the amount of rotational movement is less than a given amount.), and

when the judging unit judges affirmatively, the processing unit refers to the second table to accordingly perform the second process, so that the content is fast-forwarded or rewound at a speed associated with the calculated amount of change (Paragraph [0043] of *Tsuk et al* discloses performing an accelerated scroll function when the amount of rotational movement is determined to be greater than a predetermined amount.).

9. Claims 14-15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hagiwara et al (US 2001/0048422) and Tsuk et al (US 2003/0076301) as applied to claim 1 above, and further in view of Yamaguchi et al (US 6,710,771).

Regarding claim 14, *Hagiwara et al* as modified above discloses the user interface system according to claim 1, further comprising:

a storage unit operable to store a first table and a second table, the first table associating the individual directions with movement directions of the selected position, and the second table associating the individual amounts of change with scaling factors by which a displayed part of the chart is scaled up or down with the selected position as a center (Figure 8 of *Tsuk et al* discloses having a storage unit 804, which would store the operation code for performing the processing shown in Figures 1 and 3-5.), wherein

when the judging unit judges negatively, the processing unit refers to the first table to accordingly perform the first process, so that the selected position is moved in a movement direction associated with each direction input to the directional input unit (Paragraph [0040] – [0043] and Figures 3-5 of *Tsuk et al* disclose performing the normal scroll process when the amount of rotational movement is less than a given amount.), and

when the judging unit judges affirmatively, the processing unit refers to the second table to accordingly perform the second process, so that a displayed part of the chart is scaled up or down by a scaling factor associated with the calculated amount of change (Paragraph [0043] of *Tsuk et al* discloses performing an accelerated scroll

function when the amount of rotational movement is determined to be greater than a predetermined amount.).

Hagiwara et al as modified above fails to teach a display unit operable to display (i) a chart composed of options in an array and (ii) a selected position movable to any of the options to indicate the option is currently focused or selected.

Yamaguchi et al discloses a display unit operable to display (i) a chart composed of options in an array and (ii) a selected position movable to any of the options to indicate the option is currently focused or selected (Figure 27 discloses having a chart full of options displayed on a display and means to select one of the options.); and

and the second table associating the individual amounts of change with scaling factors by which a displayed part of the chart is scaled up or down with the selected position as a center (Figure 27 discloses having a window 90 which discloses that by using a circular input unit, the user can zoom in or zoom out on the selected chart.).

Therefore it would have been obvious to one of ordinary skill in the art at the time that the invention was made to further modify the input apparatus taught by *Hagiwara et al* with the teachings of *Yamaguchi et al* in order to form an input apparatus which can perform desired processing operation in a rapid manner.

Regarding claim 15, *Hagiwara et al* as modified above discloses the user interface system according to claim 1, further comprising:

a display unit operable to display a map and a cursor (Figure 28 of *Yamaguchi et al* discloses having a display with a map.); and

a storage unit operable to store a first table and a second table, the first table associating the individual directions with movement directions of the cursor on the map, and the second table associating the individual amounts of change with scaling factors by which a displayed part of the map is scaled up or down with the cursor as a center (Figure 8 of *Tsuk et al* discloses having a storage unit 804, which would store the operation code for performing the processing shown in Figures 1 and 3-5. Figure 28 of *Yamaguchi et al* discloses that changes in the scaling factors is associated with a circular input movement.), wherein

when the judging unit judges negatively, the processing unit refers to the first table to accordingly perform the first process, so that the cursor is moved in a movement direction associated with each direction input to the directional input unit (Paragraph [0040] – [0043] and Figures 3-5 of *Tsuk et al* disclose performing the normal scroll process when the amount of rotational movement is less than a given amount.), and

when the judging unit judges affirmatively, the processing unit refers to the second table to accordingly perform the second process, so that a displayed part of the map is scaled up or down by a scaling factor associated with the calculated amount of change (Paragraph [0043] of *Tsuk et al* discloses performing an accelerated scroll function when the amount of rotational movement is determined to be greater than a predetermined amount. Figure 28 of *Yamaguchi et al* discloses that a circular motion input is used to zoom in or out of displayed map.).

10. Claim 16 is rejected under 35 U.S.C. 103(a) as being unpatentable over Hagiwara et al (US 2001/0048422) and Tsuk et al (US 2003/0076301) as applied to claim 1 above, and further in view of SanGiovanni (US 2002/0101441).

Regarding claim 16, *Hagiwara et al* as modified above discloses the user interface system according to claim 1, further comprising:

a storage unit operable to store a first table and a second table, the first table associating the individual directions with the currently displayed options, and the second table associating the individual amounts of change with numbers by which a ranking range of the currently displayed options are to be shifted (Figure 8 of *Tsuk et al* discloses having a storage unit 804, which would store the operation code for performing the processing shown in Figures 1 and 3-5.), wherein

when the judging unit judges negatively, the processing unit refers to the first table to perform the first process, so that an option associated with each direction input to the directional input unit is focused or selected (Paragraph [0040] – [0043] and Figures 3-5 of *Tsuk et al* disclose performing the normal scroll process when the amount of rotational movement is less than a given amount.), and

when the judging unit judges affirmatively, the processing unit refers to the second table to perform the second process, so that another group of options is displayed, said another group including consecutive options within a ranking range shifted from the current ranking range by a number associated with the calculated amount of change (Paragraph [0043] of *Tsuk et al* discloses performing an accelerated

scroll function when the amount of rotational movement is determined to be greater than a predetermined amount.).

Hagiwara et al as modified above fails to teach a managing unit operable to rank and manage a plurality of options;

a display unit operable to display a group of options in a spiral array, the group including a predetermined number of options of consecutive ranks out of the plurality of options managed by the managing unit.

SanGiovanni discloses a managing unit operable to rank and manage a plurality of options (Figure 7A and paragraph [0070] discloses rotating the information elements as shown in step 732 according to the user's preference.);

a display unit operable to display a group of options in a spiral array, the group including a predetermined number of options of consecutive ranks out of the plurality of options managed by the managing unit (Figure 5 discloses showing a plurality of options in a spiral array.).

Therefore it would have been obvious to one of ordinary skill in the art at the time that the invention was made to modify the input apparatus taught by *Hagiwara et al* with the teachings of *SanGiovanni* in order to form an input apparatus which can be used to control a computer with only one hand.

11. Claim 17 is rejected under 35 U.S.C. 103(a) as being unpatentable over Hagiwara et al (US 2001/0048422) and Tsuk et al (US 2003/0076301) as applied to claim 1 above, and further in view of Goldenburg et al (US 6,636,197).

Regarding claim 17, *Hagiwara et al* as modified above discloses the user interface system according to claim 1, further comprising:

a storage unit operable to store a first table and a second table, the first table associating the individual directions with sounds, and the second table associating the individual amounts of change with scratch sounds (Figure 8 of *Tsuk et al* discloses having a storage unit 804, which would store the operation code for performing the processing shown in Figures 1 and 3-5.); and

when the judging unit judges negatively, the processing unit refers to the first table to accordingly perform the first processes, so that the output unit produces a sound associated with each direction input to the directional input unit (Paragraph [0040] – [0043] and Figures 3-5 of *Tsuk et al* disclose performing the normal scroll process when the amount of rotational movement is less than a given amount.), and

when the judging unit judges affirmatively, the processing unit refers to the second table to accordingly perform the second process, so that the output unit produces a scratch sound associated with the calculated amount of change (Paragraph [0043] of *Tsuk et al* discloses performing an accelerated scroll function when the amount of rotational movement is determined to be greater than a predetermined amount.).

Hagiwara et al as modified above fails to teach a display unit operable to display an image of a vinyl record;

an output unit operable to produce audio output, wherein

Goldenburg et al discloses a display unit operable to display an image of a vinyl record (Column 4, lines 21-39 discloses that the controlled device can be used to control video games. Column 4, lines 47-50 discloses that a display 14 is coupled to control panel 12.);

an output unit operable to produce audio output (Column 6, lines 23-31 discloses that control 12 can be used to adjust the volume. Therefore the control device would also have access to an audio output device.).

Therefore it would have been obvious to one of ordinary skill in the art at the time that the invention was made to further modify the input apparatus taught by *Hagiwara et al* with the teachings of *Goldenburg et al* in order to form an input apparatus with force feedback which helps to reduce user error.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to STEPHEN A. BRAY whose telephone number is (571)270-7124. The examiner can normally be reached on Monday - Friday, 9:00 a.m. - 5:00 p.m., EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, AMR AWAD can be reached on (571)272-7764. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/STEPHEN A BRAY/
Examiner, Art Unit 2629

/Amr Awad/
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27 March 2010